

U.S. Serial No. 09/980,068
Filed: November 28, 2001
Amendment and Response to Office Action dated 11/01/2005

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An optical projection system comprising:

a plurality of light sources spatial light modulators producing a plurality of images at least a first sub-image and a second sub-image;

b. means for superimposing at least two of the images; and

c. means for tiling at least two of the images.

a first relay for producing a first equalized sub-image from the first sub-image;

a second relay for producing a second equalized sub-image from the second sub-image;

and

a first reflective surface and a second reflective surface for combining the first equalized sub-image and the second equalized sub-image into a composite tiled image by partially overlapping the first equalized sub-image and the second equalized sub-image.

2. (Currently Amended) AnThe optical projection system according to claim 1 in which the tiling means comprises means for providing enhanced blending in overlapped regions of the tiled images wherein the first reflective surface and the second reflective surface are disposed so that the first reflective surface and the second reflective surface meet at an apex.

3. (Currently Amended) AnThe optical projection system according to claim 2 in which the

U.S. Serial No. 09/980,068
Filed: November 28, 2001
Amendment and Response to Office Action dated 11/01/2005

~~tiling means comprises wherein the first reflective surface and the second reflective surface are formed by a pyramid prism.~~

4. (Currently Amended) ~~An~~The optical projection system according to claim 32 in which the pyramid prism comprises a plurality of sides and an apex, the plurality of sides functioning to combine images and ~~wherein~~ the apex ~~functioning~~functions to decrease intensity of illumination to provide the enhanced blending in ~~the~~an overlapped regions of the first equalized sub-image and the second equalized sub-image.

5. (Currently Amended) ~~An~~The optical projection system according to claim 4 further comprising a projection lens for projecting superimposed, composite tiled images.

6. (Currently Amended) ~~An~~The optical projection system according to claim 1 in which each of the plurality of light sources ~~spatial light modulators~~ comprises one or more of a DMD digital mirror device or a liquid crystal device.

7. (Currently Amended) ~~An~~The optical projection system according to claim 3, ~~wherein~~5 in which the projection lens defines an optical axis and in which position of the pyramid prism is moved forward and backward relative to ~~the~~an optical axis can vary of the optical projection system.

8. (Currently Amended) ~~An~~The optical projection system according to claim 23 further

U.S. Serial No. 09/980,068
Filed: November 28, 2001
Amendment and Response to Office Action dated 11/01/2005

comprising at least one polarizing beam splitter interposed optically between at least one light source and the spatial light modulator and the pyramid prism to produce a superimposed image.

9. (Currently Amended) ~~An~~The optical projection system according to claim 3, wherein the prism is a pyramid prism in which the polarizing beam splitter has a reflective and a transmissive face and is interposed optically between the pyramid prism and two light sources, images from one of the two light sources being directed to the reflective face and images from the other of the two light sources being directed to the transmissive face.

10. (Currently Amended) ~~An~~The optical projection system according to claim 1 further comprising at least one pre-modulator.

11. (Currently Amended) ~~An~~The optical projection system according to claim 5 further comprising an edge mask interposed optically between the pyramid prism and the projection lens.

12. (Currently Amended) An optical projection system according to claim 8 further comprising: a combining polarizing beam splitter and an additional polarizing beam splitter interposed optically between at least one light source and the combining polarizing beam splitter, at least one light source;

at least a first spatial light modulator producing at least a first image;

U.S. Serial No. 09/980,068
Filed: November 28, 2001
Amendment and Response to Office Action dated 11/01/2005

a first polarizing beam splitter between the at least one light source and the at least one first spatial light modulator;

at least a second spatial light modulator producing at least a second image;

a second polarizing beam splitter between the at least one light source and the at least one second spatial light modulator;

a combining polarizing beam splitter for combining the first image and the second image by superimposition to create a composite first image, wherein the first image is transmitted by the first polarizing beam splitter and reflected by the combining polarizing beam splitter and the second image is reflected by the first polarizing beam splitter and transmitted by the combining polarizing beam splitter.

13. (Currently Amended) ~~An~~The optical projection system according to claim 91, wherein the first and second further comprising a system of relays lenses that act to permit adjustment of the magnification of the images from each of the light sources~~first equalized sub-image and the second equalized sub-image.~~

14. (Currently Amended) ~~An~~The optical projection system according to claim 1-in which the tiling means comprises a plurality of mirrors, further comprising a plurality of projection lenses associated therewith.

15. (Currently Amended) A method of projecting a plurality of images, the method comprising:

U.S. Serial No. 09/980,068
Filed: November 28, 2001
Amendment and Response to Office Action dated 11/01/2005

- a. creating the plurality of images;
 - b. superimposing at least two of the images; and
 - c. tiling at least two of the images.
- producing a first sub-image and a second sub-image with a first plurality of spatial light modulators;
- producing a third sub-image and a fourth sub-image with a first plurality of spatial light modulators;
- combining the first sub-image and the second sub-image by superimposition to produce a first superimposed sub-image;
- combining the third sub-image and the fourth sub-image by superimposition to produce a second superimposed sub-image; and
- combining the first superimposed sub-image and the second superimposed sub-image by tiling to produce a composite image.

Claims 16-18 (Previously Withdrawn)

19. (Currently Amended) An~~The~~ optical system according to claim 51, further comprising wherein the first equalized sub-image is projected by a first projection lens and the second equalized sub-image is projected by a second projection lens ~~a second plurality of light sources producing a second plurality of images and a second projection lens for projecting the second plurality of images or images derived therefrom.~~

U.S. Serial No. 09/980,068
Filed: November 28, 2001
Amendment and Response to Office Action dated 11/01/2005

Claims 20-27 (Canceled)

28. (New) The optical projection system of claim 12, wherein a second composite image is produced by superimposition and the projection system further comprises a first reflective surface and a second reflective surface for combining the first composite image and the second composite image into a composite tiled image by partially overlapping the first composite image and the second composite image.

29. (New) The optical projection system according to claim 28, wherein the first reflective surface and the second reflective surface are disposed so that the first reflective surface and the second reflective surface meet at an apex.

30. (New) The optical projection system according to claim 29 wherein the first reflective surface and the second reflective surface are formed by a prism.

31. (New) The optical projection system according to claim 12 further comprising at least one pre-modulator.

32. (New) The method of claim 15, wherein the first sub-image and the second sub-image are combined using at least one polarizing beam splitter and the third sub-image and the fourth sub-image are combined using at least one polarizing beam splitter.

U.S. Serial No. 09/980,068
Filed: November 28, 2001
Amendment and Response to Office Action dated 11/01/2005

33. (New) The method of claim 15, wherein the first superimposed sub-image and the second superimposed sub-image are combined by partially overlapping first superimposed sub-image and the second superimposed sub-image using a first reflective surface and a second reflective surface.

34. (New) The method of claim 33, wherein the first reflective surface and the second reflective surface are disposed so that the first reflective surface and the second reflective surface meet at an apex.

35. (New) The method of claim 34, wherein the first reflective surface and the second reflective surface are formed by a prism.

36. (New) The method of claim 15 further comprising pre-modulating light to the spatial light modulators to produce the first sub-image and the second sub-image.